Chapter 8

Hazardous Material Control

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8

Hazardous Material Control*

Contents

*** Major revision**
† New

Supplement

8.07 ES&H Requirements for Equipment Repair, Transfer, Storage, and Excess

*** Major revision**
† New

8

Hazardous Material Control

8.1 Introduction

Because of their chemical, physical, or pathological properties, hazardous materials may present a risk of injury to LLNL personnel, visitors, offsite individuals, or the environment. This chapter outlines general procedures for safely and legally procuring, receiving, transporting, using, and disposing of hazardous materials. It also summarizes and establishes policy to protect the health and safety of personnel and the environment and to comply with applicable Department of Energy (DOE) orders as well as federal, state, and local regulations.

Other documents that contain requirements pertaining to the handling of hazardous materials are as follows:

- *Environmental Compliance Manual* (formerly the *Environmental Protection Handbook*).
- *Nuclear Material Control and Accountability Manual.*
- *On-Site Hazardous Material Packaging and Transportation Safety Manual.*
- Site-specific facility safety procedures (FSPs) and operational safety procedures (OSPs) (see Chapter 2 of the *Health & Safety Manual* for details), site safety plans and safety analysis documents (see Supplement 6.06 of the Manual for details), or internal procedures.
- Operational Procedures for Licensed Facilities Under U.S. Drug Enforcement Administration.
- Hazardous Materials Packaging and Transportation Safety Quality Assurance Plan.

Detailed information on these documents can be found in Section 8.7 of this chapter.

8.2 Applicability

The requirements of this chapter (including those in the documents referenced in Section 8.1) are applicable to the Livermore Site, Site 300, and any other location where LLNL personnel have primary responsibility for managing hazardous materials and protecting the health and safety of employees, the public, and the environment. These requirements apply to the following hazardous materials:

- Explosives and blasting agents
- Compressed gases

- Flammable, combustible, and pyrophoric liquids
- Flammable solids
- Spontaneously combustible and water reactive chemicals
- Oxidizing materials and organic peroxides
- Poisonous or irritating materials
- Etiologic (infectious) agents
- Radioactive materials
- Corrosive materials
- Miscellaneous hazardous materials
- Other regulated materials (ORM)

This category of hazardous materials, which is based on the nature of the hazard presented by the material, basically conforms with the U.S. Department of Transportation (DOT) classification system (see Code of Federal Regulation, Title 49, Part 173).

LLNL policy also requires hazardous material to be divided into the three categories below based on the level of classification and whether the material is classified as waste.

- **Category 1—**Hazardous materials which are also "controlled materials" because of their security classification, high value, or special hazards. Examples are
  - — accountable nuclear materials
  - — alkali metals (certain ones)
  - — carcinogens (some)
  - — classified parts and materials
  - — explosives
  - — material contaminated with accountable amounts of controlled material
  - — mock high explosives (mock HE)
  - — precious metals, gems, and other valuable materials
  - — radioactive materials
  - — special reactor materials
- **Category 2—**Unclassified hazardous wastes of negligible economic value (e.g., asbestos, spent acids).
- **Category 3—**All hazardous materials other than those that fall into Category 1 or 2. Category 3 includes most industrial and laboratory chemicals that are not wastes.

8.3 Requirements/Regulatory Summary

A listing of the federal, state, and local regulations; DOE orders; and LLNL policies used as a basis for the preparation of this document can be found in Section 8.7.

8.4 Process for Compliance/Risk Reduction

8.4.1 Procuring Hazardous Materials and Related Equipment Requiring Prior Approval

The procurement of hazardous materials and related items in this section must be pre-authorized by a specified representative from Hazards Control. The technical discipline with signature authority is listed in bolded text after each item. Most of the items listed may not be purchased using a ProCard. Refer to the latest version of the *LLNL ProCard User's Guide* for a list of restricted items and the current authorization procedure. Procurement and Materiel automatically forwards any request for these items to Hazards Control. Therefore, it is usually more efficient to contact Hazards Control in advance to discuss the purchase of any of these materials because special precautions or procedures may be required before you can receive authorization. The Hazards Control disciplines will contact Health Services for consultation regarding health effects or medical surveillance, as appropriate.

- Acoustical Tile (some types)—**Fire Protection Engineering**
- Alkali Metals (some types or quantities. Refer to Supplement 21.14 of the *Health & Safety Manual*)—**Industrial Hygiene**
- Asbestos or asbestos-containing products. These materials are subject to regulatory restrictions and will only be permitted if no acceptable substitute is available (see Supplement 21.19)—**Industrial Hygiene**
- Atmospheric monitoring equipment, such as combustible, toxic gas, or oxygen deficiency detectors or related alarm systems—**Industrial Hygiene**
- Beryllium (see Supplement 21.10)—**Industrial Hygiene**
- Breathing air fittings (see LLNL Respiratory Protection Policy)—**Industrial Hygiene**
- Carcinogens—Specified carcinogens (see Supplements 21.16A and 21.16B)—**Industrial Hygiene**
- Explosives (see Chapter 24)—**Explosives Safety**
- Ionizing radiation detectors and alarms—**Health Physics**
- Radioactive sources and materials (see Chapter 33)—**Health Physics**
- Toxic or corrosive compressed gases (See Supplement 21.02 and 21.12)—**Industrial Hygiene**

Authorization for the procurement of controlled drugs or drug-precursor chemicals is limited to individuals who have a valid and current Drug Enforcement Agency (DEA) license. Procurement and Materiel maintains a license for LLNL. For guidance on procuring controlled drugs or drug-precursor chemicals, contact the Procurement and Material DEA activity coordinator. For further reference on controlled substances, refer to the *Laboratory Procurement Policy and Standard Practices Manual*, Supplemental Instruction 8.7.

Procurement of DOT performance-based packaging used for transporting hazardous material must be approved by LLNL's Hazardous Material Packaging and Transportation Safety (HMPTS) Assurance Office.

Authorization requirements for the acquisition of non-hazardous materials (e.g., precious metals, classified items, office equipment) that require approval before procurement are not addressed in this chapter.

8.4.2 Receipt and Transportation of Hazardous Materials

Below are the requirements for receiving and transporting hazardous materials at LLNL.

- All Category 3 hazardous materials and some Category 1 materials shipped by commercial vendors or other DOE sites are received by the Receiving Section of the Materials Distribution Division (MDD), Business Services Department, except when MDD and the ES&H Team Leader have reviewed and authorized a specific, direct delivery area. (Bar codes are placed on each chemical container, which is then entered into the ChemTrack System at the time of receipt. See Appendix 8-A for items to be included in ChemTrack.) Direct delivery areas must meet established ES&H requirements (administrative and physical controls), as described in Appendix 8-B.
- Industrial gases and 55-gal. chemical and solvent drums shall be received at the Industrial Gas Yard by the Industrial Gases Section of the Shipping/Receiving Group of MDD, Bldg. 518.
- Hazardous and some controlled materials shall enter Site 300 through the Shipping/Receiving Group of MDD; explosive materials shall be delivered directly to a controlled explosives receiving area.
- The Receiving Group shall ensure that the material received is properly packaged and secured. The group shall also arrange for temporary storage and delivery of materials to the final users (see the *On-Site Hazardous Material Packaging and Transportation Manual,* UCRL-MA-108269).
- The Materials Management Section of the Mechanical Engineering Department shall receive Category 1 materials from vendors, MDD, or other DOE sites. These include radioactive materials, fissile materials, accountable nuclear material, nuclear explosive-like assemblies (NELAs) (see Supplement 8.01), explosives, classified parts, certain alkali metals (see Supplement 21.14), and certain carcinogens (see Supplements 21.16A and 21.16B).

The Materials Management Section shall arrange for storage and transportation of these materials and deliver them to qualified end users, as described in the *On-Site Hazardous Material Packaging and Transportation Manual* and all applicable Materials Management Section operational procedures. Bar code labels for the ChemTrack system are to be placed on containers at this point.

- The Hazardous Waste Management (HWM) Division of the Environmental Protection Department shall receive reusable hazardous materials and hazardous waste (see Chapter 9 of the *Environmental Compliance Manual*), including hazardous waste generated from the use of Category 1 and 3 materials (some limitations apply). The Division shall also arrange for the reuse or temporary storage and / or transportation of such materials to HWM treatment and storage facilities in accordance with the guidelines in *On-Site Hazardous Material Packaging and Transportation Manual* and all applicable HWM operational procedures.

8.4.3 Labeling of Hazardous Materials/Storage Locations

The following precautions are required when storing hazardous materials:

- Warning signs must be posted in all areas where hazardous materials are handled or stored (see Chapters 11, 21, 24, 32, and 33 and Supplements 7.02 and 21.01 of the *Health & Safety Manual*).
- A label and / or a material tag or other means of identification must be attached to each container indicating its content. Equipment containing or contaminated with hazardous materials should also be identified and labeled appropriately. More specific requirements depend on the type of material (e.g., explosives). Consult the hazard specific chapters of the *Health & Safety Manual* and the *Environmental Compliance Manual* for additional details.
- Waste containers must have the appropriate hazardous, radioactive, mixed, or nonhazardous waste label (see Chapter 9 of the *Environmental Compliance Manual* for guidance, if necessary).
- Chemicals in primary containers should be entered into the LLNL "ChemTrack" system for tracking. Contact the ChemTrack Operations Group at extension 4-4404 for assistance.

8.4.4 Storage

Facilities used to store hazardous and controlled materials shall meet the safety criteria specified in various sections of the *Health & Safety Manual*, *Environmental Compliance Manual*, and the *Nuclear Material Control and Accountability Manual*. Hazardous materials shall remain in storage until needed.

8.4.5 Offsite Shipping of Hazardous Materials

Offsite shipments of hazardous materials shall conform with the following requirements:

a. Hazardous materials, substances, or wastes to be shipped offsite shall be packaged, marked, and labeled in accordance with applicable DOT regulations and DOE orders. ("Offsite" for hazardous material packaging and transportation or hazardous waste generation is any activity outside the geographically contiguous private property owned by or under the control of LLNL.) For example, materials transported across East Avenue to Sandia National Laboratory must conform to offsite shipping requirements.

b. The Laboratory is considered the "shipper" whenever hazardous materials, substances, or wastes are shipped offsite; the vendor or person who transports the material is the "carrier." In some cases, LLNL may be both the shipper and carrier (e.g., transportation of hazardous material from Livermore to Site 300). As a shipper, the Laboratory shall
   - package, properly mark, and label containers;
   - provide material safety data sheets (MSDSs) to accompany the load, if applicable;
   - prepare shipping documents;
   - offer placards;
   - perform quality assurance checks before the material leaves the site; and
   - provide a bill of lading when necessary.

c. Hazardous materials shall only be shipped by one of the following organizations. The custodian of the material shall contact the appropriate organization to package, mark, and label the material for shipment.
   - Materials Management Section (Category 1 non-waste materials)
   - HWM Division (Category 1 waste and all Category 2 materials)
   - Shipping Section of MDD (Category 1 non-waste and Category 3 materials)

   Only these organizations are authorized to act as "shippers" for the Laboratory. No other organization or individual is authorized to arrange for carriers to transport hazardous materials offsite.

d. Shipping documents shall be prepared by the Shipping Section of the Traffic Managers Office (Category 3 materials), the HWM Division (Category 2 materials), and the Materials Management Section (Category 1 materials).

e. Contractors authorized to ship hazardous materials offsite for their contract organization shall have the shipping documents prepared by one of the organizations mentioned in "c" above. Any organization that transports hazardous materials, substances, or wastes offsite is considered a carrier and shall obtain signed shipping documents from the Traffic Office of the Services and Distribution Department.

f. Final quality checks of all offsite shipments of hazardous materials shall be performed by the Traffic Office of the Services and Distribution Department.

8.4.6 Transfer of Potentially Contaminated Equipment for Repair, Reuse, Storage, or Excess

Equipment that contained or may have come in contact with hazardous materials may need to be transferred from one onsite location to another, placed in storage, or excessed / sold for the equipment's intended purpose to another governmental agency or the public. See Supplement 8.07 of the *Health & Safety Manual* for more details.

8.5 Responsibilities

In addition to the responsibilities specified below, each organization must ensure that personnel assigned to handle hazardous materials are adequately trained and equipped to perform their work safely and in accordance with LLNL and DOE policies.

8.5.1 Hazardous Materials Packaging and Transportation Safety Committee

The Hazardous Materials Packaging and Transportation (HMPT) Safety Committee shall do the following:

- Oversee the Laboratory's packaging and transportation safety program and assess its effectiveness.
- Maintain the Hazardous Materials Packaging and Transportation Safety Quality Assurance Plan.
- Maintain the *On-site Hazardous Materials Packaging and Transportation Safety Manual*.
- Approve the procurement of all containers used to transport hazardous materials.

The chairperson of the HMPT Safety Committee reports to the Associate Director for Plant Operations.

8.5.2 Materials Management Section

The Materials Management Section shall do the following for Category 1 hazardous materials:

- Provide for the safe and secure receipt and distribution of Category 1 hazardous materials in accordance with LLNL and DOE policies.
- Request that the ChemTrack Office place bar code labels on and inventory chemical containers, as required.

- Manage Category 1 hazardous materials to ensure accountability and day-to-day control.
- Ensure that proper packaging and labeling procedures are followed.
- Prepare the appropriate documents for the offsite shipment of Category 1 hazardous materials. Category 1 classified hazardous waste documents are prepared in coordination with the HWM Division of EPD.
- Determine compatibility requirements for loads.
- Obtain assistance from Hazards Control when necessary.
- Fulfill the responsibilities described in the *On-site Hazardous Materials Packaging and Transportation Safety Manual.*
- Obtain DOE interim Hazard Classifications and DOT classification for new explosives or new explosive articles.
- Determine the need for DOT exemptions and obtain these exemptions when necessary.

The Materials Management Section leader is a principal participant in the HMPT Safety Committee.

8.5.3 Materials Distribution Division

The Materials Distribution Division shall do the following for Category 1 non-waste and Category 3 hazardous materials:

- Establish and maintain a system of procedures and controls for the safe and efficient receipt, distribution, and shipment of hazardous materials. Place bar codes on and inventory chemical containers when they arrive onsite.
- Forward MSDSs to Hazards Control, MSDS, L-384.
- Establish and maintain a system for dating peroxidizable chemicals when they arrive at LLNL.

The MDD leader is a principal participant in the HMPT Safety Committee.

8.5.4 Hazardous Waste Management Division

The HWM Division shall do the following for hazardous wastes:

- Review and approve shipping documents and manifests before the material is shipped offsite. Coordinate preparation of shipping documents (hazardous waste manifests) for classified hazardous waste with the Materials Management Section.
- Provide
  - — technical assistance through the ES&H teams to Laboratory personnel on how to package hazardous, radioactive, and mixed wastes;

  - guidance on the recycling of selected chemicals through the Chemical Exchange Warehouse (CHEW);
  - the proper placards and labels for waste storage containers; and
  - emergency assistance for releases to the environment.

- Establish a system of procedures and controls for the safe, efficient, and secure transport and storage of LLNL's hazardous, radioactive, and mixed wastes. The Division shall also ensure that these procedures comply with regulatory requirements.
- Treat and/or repackage wastes when necessary.
- Prepare and sign shipping documents and manifests.
- Determine compatibility requirements for loads.
- Fulfill the responsibilities described in the *On-site Hazardous Materials Packaging and Transportation Safety Manual*.

The HWM Division leader is a principal participant in the HMPT Safety Committee.

8.5.5 Hazards Control Department

The Hazards Control Department shall do the following:

- Respond to emergency situations and incidents involving hazardous materials, substances, and wastes.
- Provide
  - liaison, safety guidance, and safety services to personnel who package and transport hazardous materials;
  - emergency response communication through the Fire Department for hazardous material incidents; and
  - information about the hazards of specific materials, including the MSDS for materials on file. The Department shall also provide MSDSs upon request.
- Fulfill the responsibilities described in the *On-site Hazardous Materials Packaging and Transportation Safety Manual*.

The Hazards Control Department has a member of management that serves on the HMPT Safety Committee as a general member.

8.5.6 Traffic Manager

The traffic manager provides several services, including the following:

- Selects the carrier and route of shipment for all offsite transportation of hazardous materials (Categories 1, 2, and 3).
- Prepares a bill of lading.
- Reviews and approves load placement, associated shipping documents, and waste manifests before shipment.

- Interfaces with jurisdictional authorities and commercial carriers when shipping hazardous materials offsite.
- Provides secondary oversight for DOT compliance of shipping papers, shipping containers, and carrier vehicles.

The Traffic Manager serves on the HMPTS committee as a general member.

8.5.7 Supervisors

Supervisors of employees who receive, use, or transport hazardous materials onsite and offsite shall do the following:

- Ensure that their employees adhere to the requirements contained in this and other policy and procedure documents listed in Section 8.7.
- Ensure that employees are trained in accordance with safety policies and procedures that cover how to obtain, use, package, move, and store hazardous materials, substances, and waste materials as applicable.
- Obtain MSDSs and make them available to employees who handle hazardous materials.
- Complete training course HS4050, "Health Hazard Communication for Supervisors"; and course EP0006, "Hazardous Waste Handling Practices."

8.5.8 Employees

Programmatic personnel, researchers, waste generators, HWM technicians, and others who request shipment of hazardous materials or substances or generate waste materials shall do the following:

- Obtain and review MSDSs and follow the safety procedures indicated on the MSDS when using and storing hazardous material.
- Determine the category of such materials using the guidelines outlined in this chapter. Consult with the ES&H team, if necessary.
- Make sure that bar code labels for the ChemTrack system are on all containers when required. At the time of disposal, remove the lower half of the bar code, affix it to a ChemTrack Disposal/Transfer Form, and mail the form to the ChemTrack Group so the container can be scanned and removed from the system. Programmatic personnel are responsible for ensuring that chemicals are appropriately labeled. When HWM technicians operate under a memorandum of understanding, they are working as agents of the Program.
- Contact the organization responsible for packaging and transporting these materials (see Section 8.4.5).
- Follow Laboratory policy and established safety procedures, including any instructions provided by the organizations authorized to ship these materials.
- Fulfill the responsibilities described in the *On-site Hazardous Materials Packaging and Transportation Safety Manual.*

8.5.9 Laboratory Assurance Office

The Laboratory Assurance (LAO) Office shall do the following:

- Provide guidance to the Materials Management Section, HWM Division, MDD, and users of hazardous materials on how to prepare and maintain individual quality assurance and control programs.
- Provide guidance to the HMPT Safety Committee on how to manage quality assurance appraisals.
- Suggest corrective actions when necessary.

8.5.10 Protective Force Division

The Protective Force Division within Safeguards and Security shall provide escort services for onsite transfers and/or shipments of Safeguards Categories I and II quantity materials in accordance with the guidance in DOE Order 5610.14, "Transportation Safeguards System Program Operations."

8.5.11 DEA Activity Coordinator

The DEA activity coordinator in Procurement and Materiel shall coordinate the control of DEA-controlled drugs and drug precursors at LLNL. The coordinator shall also ensure that these items are only procured for individuals and organizations with a current DEA license.

8.5.12 Fleet Management

The Automotive Fleet Management Group shall provide routine maintenance on all transportation vehicles and approve those that carry explosives after each planned maintenance operation and upon request of the user.

8.5.13 ChemTrack Operations Group

The ChemTrack Operations Group shall do the following:

- Administer and maintain the Laboratory's chemical inventory database.
- Complete an annual site-wide inventory of bar-coded chemical containers.
- Prepare required chemical inventory and use reports for internal customers and regulatory agencies.
- Assist chemical users and Materials Distribution Division personnel (Receiving) with bar coding and chemical inventory activities upon request.

8.5.14 Technical Release Representatives (TRRs)

Technical Release Representatives shall do the following:

- Follow LLNL's procurement procedures when placing orders for the hazardous materials and related items in Section 8.4.1. Refer to the latest version of the *LLNL ProCard User's Guide* for a list of restricted items and the authorization procedure.

- Notify the ChemTrack Group when chemicals purchased with ProCard arrive so that those without bar codes can be properly inventoried.

8.5.15 Shipping Services

Shipping Services shall do the following for Category 1 non-waste and Category 3 hazardous materials:

- Ensure that hazardous material containers meet the requirements in DOT shipping documents and DOE orders before transporting the material offsite. The contents of these containers shall be packaged and labeled properly.
- Provide transportation services when requested, including the proper placards and labels.
- Package hazardous materials.
- Prepare shipping documents.
- Determine compatibility requirements for loads.
- Obtain assistance from the ES&H teams when necessary.
- Fulfill the responsibilities described in the *On-site Hazardous Materials Packaging and Transportation Safety Manual.*
- Ensure that hazardous materials are packaged and transported in accordance with applicable DOT, safety, and environmental regulations.
- Obtain shipping containers and ensure that they meet applicable DOT, UN, DOE, ES&H, and quality assurance requirements. These containers shall be provided to organizations that ship hazardous materials, substances, and wastes.

8.6 LLNL Contacts

For general information on storing, labeling, and using hazardous materials, or for special procedures, contact the appropriate ES&H team.

- Team 1 (ext. 2-5211)
- Team 2 (ext. 3-1714)
- Team 3 (ext. 2-8794)
- Team 4 (ext. 3-9562)

For off-shift ES&H support, call ext. 2-7595 or the appropriate organization below.

Packaging Requirements

- Materials Management Section (Livermore, ext. 3-9980; Site 300, ext. 3-5334)—Category 1 materials
- HWM technician (ext. 3-1996)—Category 2 materials
- Shipping Section (ext. 2-7495)—Category 3 materials

Training Requirements

- Materials Management Section (ext. 2-7882) and Hazards Control Department Training and Safety Analysis Group (ext. 2-1217)—Category 1 materials
- EPD Training Section (ext. 2-9236) or the appropriate ES&H team—Category 2 materials
- Hazards Control Department Training and Safety Analysis Group (ext. 2-1217)—Category 3 materials

ChemTrack System

ChemTrack Hotline (ext. 4-4404) or QuickMail (Address: ChemTrack Hotline, MailCenter EPD_ORAD).

8.7 Supporting References and Standards

Bay Area Air Quality Management District Regulations (Livermore Site).

California Code of Regulations, Title 22, Division 4.5, "Environmental Health Standards for the Management of Hazardous Waste."

California Health and Safety Code, Chapter 6.95, "Hazardous Materials Release Response Plans and Inventory."

Code of Federal Regulations, Title 10, Part 71, "Packaging and Transportation of Radioactive Materials."

Code of Federal Regulations, Title 29, Part 1910, "General Industry Safety Standards."

Code of Federal Regulations, Title 29, Part 1926, "Construction Industry Safety Standards."

Code of Federal Regulations, Title 40, Parts 260–265 (various subjects).

C*ode of Federal Regulations*, Title 40, Parts 355, 370, 372, "Community Right-to-Know Reporting."

Code of Federal Regulations, Title 49, Parts 100–199, "Transportation."

Comprehensive Drug Abuse And Control Act of 1970, PL 91-513.

DOE 1324.2A / AV-12, *Travel and Transportation Records*.

DOE O 1540.1A, *Materials Transportation and Traffic Management*.

DOE 1540.2, *Hazardous Material Packaging for Transportation Administration Procedures*.

DOE O 1540.3A, *Base Technology for Radioactive Material Transportation*.

DOE O 3791.2A, *Federal Employee Motor Vehicle Safety Program*.

DOE 5400.3, *Hazardous and Radioactive Mixed Waste Program*.

DOE 5400.4, *Comprehensive Environmental Response, Compensation, and Liability Act Requirements*.

DOE 5480.1A, *ES&H Programs For DOE Contractors.*

DOE 5480.3, *Safety Requirements for Packaging and Transportation of Hazardous Materials*.

DOE 5480.4, *Environmental Protection, Safety, and Health Protection Standards.*

DOE 5480.7A, *Fire Protection*.

DOE 5480.10, *Contractor Industrial Hygiene Program*.

DOE 5610.12, *Packaging and Offsite Transportation of Nuclear Components, And Special Assemblies Associated with the Nuclear Explosive and Weapons Safety Program.*

DOE 5610.14, *Transportation Safeguards System Program Operations*.

DOE 5820.2A, *Radioactive Waste Management*.

DOE/EV/06194, *DOE Explosives Safety Manual*.

Environmental Compliance Manual, Environmental Protection Department, Lawrence Livermore National Laboratory, Livermore, CA (latest edition).

Hazardous Materials Packaging and Transportation Safety Quality Assurance Plan, M-078-90.0 (latest edition).

Hazardous Waste Management Quality Assurance Plan, M-78-92.

Materials Distribution Division Quality Assurance Plan for Hazardous Materials Packaging and Transportation, M-78-93.

Nuclear Material Control and Accountability Program Manual, Lawrence Livermore National Laboratory, CA (latest edition).

On-Site Hazardous Materials Packaging and Transportation Safety Manual, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-MA-108269 (latest edition).

San Joaquin Valley Unified Air Pollution Control District Regulations (Site 300).

Site 300 Safety and Operational Manual, Lawrence Livermore National Laboratory, Livermore, CA, M091-2-0669 (latest edition).

Appendix 8-A

ChemTrack Inventory Guidance

The following items are included in the ChemTrack inventory system:

- Laboratory and photographic chemicals (except film)
- Pressurized gases / aerosol cans
- Paints, adhesives, sealants, dyes
- Industrial cleaners (e.g., solvent-based)
- Office, custodial, and cafeteria chemicals in >1 gallon containers
- Oils, lubricants, and coolants
- Herbicides and pesticides
- Specialty batteries (e.g., large lithium)

Safety Note: Chemicals are packaged for shipment according to DOT requirements. When transporting chemicals, do not open or alter the packaging until the material has reached its final destination.

The following items are excluded from the ChemTrack inventory system:

- Food
- Personal care products
- Office, custodial, and cafeteria chemicals in $\leq$1 gallon containers
- Biological products (serums, enzymes, amino acids, antibiotics)
- High explosives
- Radioactive and mixed materials
- Most analytical samples
- Unboxed wire (all types)
- Most batteries

Appendix 8-B

Controls for Authorized Chemical Delivery Areas

The ES&H teams will use administrative and physical controls when authorizing the establishment of areas (drop off points) where the United Parcel Service (UPS) can deliver chemicals. These areas are intended to be used for short-term (generally less than 24 hours) chemical storage and handling activities only. Specific controls will be developed by the ES&H teams for particular circumstances on a case-by case-basis.

The ES&H Team Leader will notify the Material Distribution Division (MDD) Leader in writing of direct delivery areas reviewed and approved by the ES&H team. MDD will then evaluate the area and, if appropriate, add it to the list of authorized drop off points. A copy of the notification will be sent to the Facility Manager.

The controls below are to be considered for each direct delivery area. Review of the intended operations will determine the appropriateness and extent of the necessary controls to be in place before a delivery.

Administrative Controls

- Clearly describe the intended purpose of the area (i.e., the kind of materials to be received, chemicals prohibited from entering the area, including any other limits).
- Develop operating procedures and a spill response plan. These should include
  - — A notification procedure for chemical deliveries.
  - — Information about who to call and what to do in case of a spill or leaking packages.

  The spill response plan must be readily accessible in chemical handling areas.
- Identify responsible personnel and ensure they are properly trained. At minimum, training should cover
  - — Course HS4240, “Chemical Safety,” or equivalent course
  - — Department of Transportation (DOT) regulations
  - — ChemTrack procedures (For further information, contact the Chem Track Operations Group, ext. 2-2256)
- Ensure that a ChemTrack bar-coding operation is in place.
- Ensure that the self-assessment plan includes a periodic review of the operation.

Physical Controls

- Provide adequate ventilation for the types of chemicals to be handled.
- Ensure an appropriate level of security, access control, and easy access to a telephone.
- Ensure adequate fire and seismic protection.
- Provide personal protective equipment, a spill kit, and access to a functioning safety shower and an eyewash station.
- Make provisions for secondary containment and protection from the elements.
- Properly segregate incompatible materials.
- Separate the chemical-handling area from storm and sanitary sewer drains.